Figure 1 A One Dimensional Digital Signal

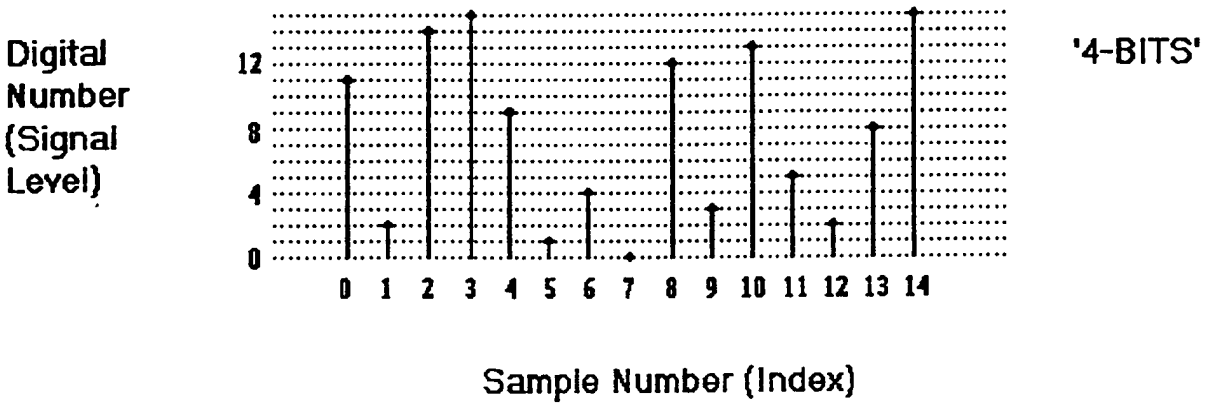


Figure 2 General Overview of Eye-D

Step 1: Obtain or create original digital signal or image

Step 2: Estimate rough offset and rms noise

Step 3: Choose N of N-bit Identification Word, e.g. 32

Step 4: Generate N-bit Identification Word

Step 5: Generate or synthesize N "random" independent signals with roughly gaussian distribution about some mean value, where signals have equal extent and digital spacing of original digital signal or image

Step 6: Apply digital filter which attenuates both low and high frequencies, leaving middle-range frequencies largely intact

Step 7: Condense N random signals to a lowest acceptable bit value if memory or storage space is at a premium

Step 8: Add all random images together which have a corresponding '1' in their assoociated bit-place-value of the N-bit identification word, call this the base composite signal or image

Step 9: Experiment visually with gain and gamma applied to base composite signal or image, adding this to original digital signal or image, and determining the acceptable perceived noise level

Step 10: Apply found gain and gamma to base composite, add to original, then call this the distributable signal or image

Step 11: Store away and secure original signal or image, along with N-bit identification word and the N random signals

Step 12: Sell or distribute the distributable signal or image

Figure 3 Identifying Suspect Signal or Image

Step 1: Obtain digital or non-digital copy of suspect signal or image

Step 2: Digitize if not already digital

Step 3: Cut and mask portion of signal or image believed to be suspect (only if entire signal or image is not suspect)

Step 4: Procure original digital signal or image and cut and mask to roughly the same location or sequence number

Step 5: Visually rescale and register the cut-out suspect signal to the cut-out original signal

Step 6: Run through search program with mean squared error as criteria and x offset, y offset, and scale as the three variables

Step 7: Apply x offset, y offset, and scale to cut-out suspect, then resample onto exact grid and cut-out of original signal

Step 8: Run through search program with mean squared error as criteria and dc offset, gain, and gamma as the three variables; apply to suspect

Step 9: Subtract original from suspect, giving difference signal or image

Step 10: Step through all N random independent signals, masked as original and cross-correlated with difference signal in immediate neighborhood of registration points;

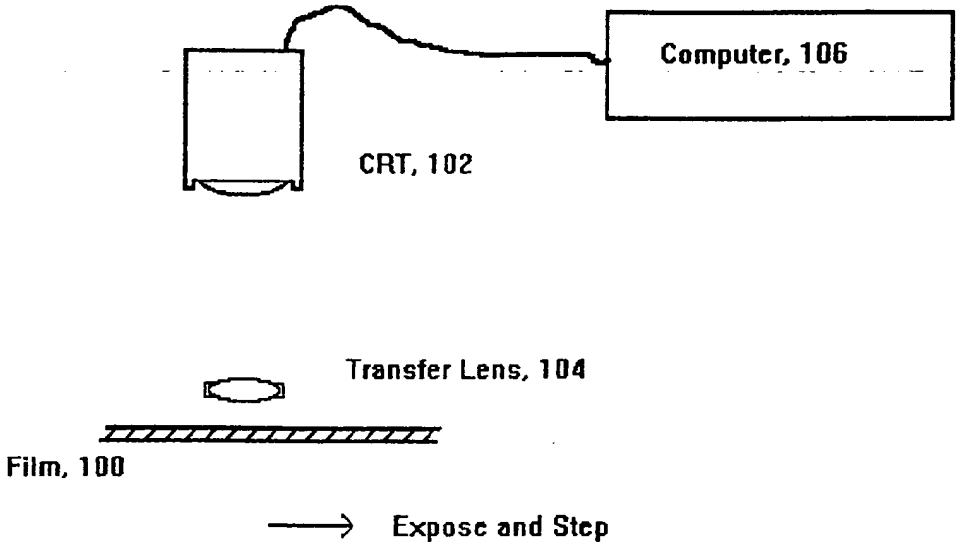
Step 11: Find 0 and 1 level by averaging first four 0101 code values

Step 12: Assign either a 0 or a 1 to each cross-correlation result depending on proximity to the averages of step 11

Step 13: Check result against secured identification number

Step 14: Prosecute if it matches? Or at least send a nasty letter demanding recompense

Figure 4 **Schematic of Apparatus to Pre-Expose Film with Unique Serial Numbers**



Also Known As: Automated Film Writing System